Quintozene

Chemical Information
It is a white or colorless crystalline solid with a characteristic pleasant odor.
CAS Number - 82-68-8
Alternate Names - nitroPentachlorobenzene, quintobenzene, pentachloronitrobenzene
General Uses - Quintozene is used as a fungicide for seed treatment, soil application, and as a slime inhibitor in industrial waters. It is also used to prevent the growth of fungi on grass, lawn flowers, ornamental crops, shrubs and in gardens.
Potential Hazards - This chemical is harmful if swallowed, inhaled or absorbed through the skin. It may cause irritation. In addition, this chemical emits toxic fumes of chlorine, carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen chloride gas and phosgene when heated to decomposition. Potential liver toxicity (EPA Integrated Risk Information System – IRIS).

Summary Analysis– Quintozene

- In 2003, the 604,434 pounds of quintozene accounted for 0.8 percent of the total quantity of PCs. Compared to the quantity reported in 1999, there was about a 166 percent increase in the quantity of quintozene. The number of facilities that reported quintozene between 1999 and 2000 remained relatively constant, with 6 facilities reporting this chemical in 2003. Two of these facilities reported nearly 99 percent of the total quantity.
- Since 1999, disposal of quintozene decreased by almost 84 percent – to less than 700 pounds in 2003. Except for a large increase in 2000, the use of energy recovery for quintozene remained relatively constant and was used for 37 percent of the total quantity of quintozene, or nearly 224,000 pounds in 2003. Treatment increased dramatically in 2003 when facilities treated over 380,000 pounds of quintozene. Since 1999, recycling of quintozene steadily decreased – only 105 pounds were recycled in 2003.
- Facilities in Regions 6 and 9 reported almost 99 percent of the total quantity of quintozene in 2003.
- A facility in Arkansas accounted for 61 percent of the total quantity of this chemical in 2003. One facility in California accounted for almost 38 percent of the total quantity.
- In 2003, 6 facilities in 2 industry sectors reported a PC quantity of quintozene. One facility in the SIC 9511 (Air, water, and solid waste management) industry sector accounted for 61percent of this chemical. Five facilities in SIC 2879 (Pesticides and agricultural chemicals, nec) reported 39 percent of the quintozene.

National Trends – Quintozene. Exhibit 4.227 presents the total PC quantity (pounds) of quintozene reported in 1999 to 2003, showing the disposal, treatment, energy recovery, as well as recycling quantities. In 2003, the 604,434 pounds of quintozene accounted for 0.8 percent of the total quantity of PCs. Compared to the quantity reported in 1999, there was about a 166 percent increase in the quantity of quintozene. The number of facilities that reported quintozene between 1999 and 2000 remained relatively constant, with 6 facilities reporting this chemical in 2003. Since 1999, disposal of quintozene decreased by almost 84 percent – to less than 700 pounds in 2003. Except for a large increase in 2000, the use of energy recovery for quintozene remained relatively constant. In 2003, energy recovery was used for 37 percent of the total quantity of quintozene, or nearly 224,000 pounds. Treatment of increased dramatically in 2001

and increased even more in 2003 when facilities treated over 380,000 pounds of quintozene. Since 1999, recycling of quintozene steadily decreased – only 105 pounds were recycled in 2003.

Exhibit 4. 227. National-Level Information for Quintozene (1999-2003)

	1999	2000	2001	2002	2003	Percent Change (1999 - 2003)	Management Method -- Percent of Quantity of this Chemical in 2003
Number of Facilities	5	7	8	5	6	20.0%	
Disposal Quantity (lbs.)	4,257	4,999	6,025	21	693	-83.7%	0.1%
Energy Recovery Quantity (lbs.)	214,698	558,653	205,972	195,927	223,510	4.1%	37.0%
Treatment Quantity (lbs.)	8,126	6,361	279,101	216,282	380,231	4579.2%	62.9%
Priority Chemical Quantity (lbs.)	227,081	570,013	491,098	412,230	604,434	166.2%	
Recycling Quantity (lbs.)	2,371	2,299	2,365	184	105	-95.6%	

Exhibit 4.228 shows the number of facilities that reported quintozene within various quantity ranges. Of the 6 facilities that reported quintozene in 2003, 2 facilities reported nearly 99 percent of the total quantity.

Exhibit 4. 228. Distribution of Facilities that Reported Quantities for Quintozene (2003)

Quintozene (604,434 pounds)		
Quantity Reported	**Number of Facilities Reporting this quantity**	**Percent of Total Quantity for this Priority Chemical**
up to 10 pounds	0	0.0%
between 11 - 100 pounds	1	less than 0.1%
between 101 -1,000 pounds	1	0.1%
between 1,001 - 10,000 pounds	2	1.2%
between 10,001 - 100,000 pounds	0	0.0%
between 100,001 - 1 million pounds	2	98.7%
> 1 million pounds	0	0.0%

EPA Region Trends- Quintozene. Exhibit 4.229 shows the quantity (pounds) of quintozene reported by facilities in 5 EPA Regions in 1999 to 2003. In 2003, facilities in 4 of the Regions reported quintozene (Exhibit 4.230). Since 1999, facilities in Region 5 steadily decreased their quantity of quintozene – none was reported in 2002 or 2003. Facilities in Regions 6 and 9 reported almost 99 percent of the total quantity of quintozene in 2003. Facilities in Region 6 reported the largest quantity of quintozene in 2003, accounting for over 61 percent of the total quantity.

Exhibit 4. 229. Quantity of Quintozene Reported by EPA Regions (1999-2003)

EPA Region	1999	2000	2001	2002	2003	Percent Change in Quantity (1999-2003)	Percent Of the Total Priority Chemical quantity (2003)
6	0	262,247	276,565	207,123	369,297	NA	61.1%
9	214,698	296,406	205,972	195,927	227,957	6.2%	37.7%
7	47	3,388	1,654	7,210	4,014	8440.4%	0.7%
4	2,443	751	931	1,970	3,166	29.6%	0.5%
5	9,893	7,221	5,976	0	0	NA	0.0%
Total	227,081	570,013	491,098	412,230	604,434	166.2%	

Exhibit 4. 230. Distribution of Facilities Reporting Quintozene in 2003 & Quantity of Quintozene Reported in 2003 per Region

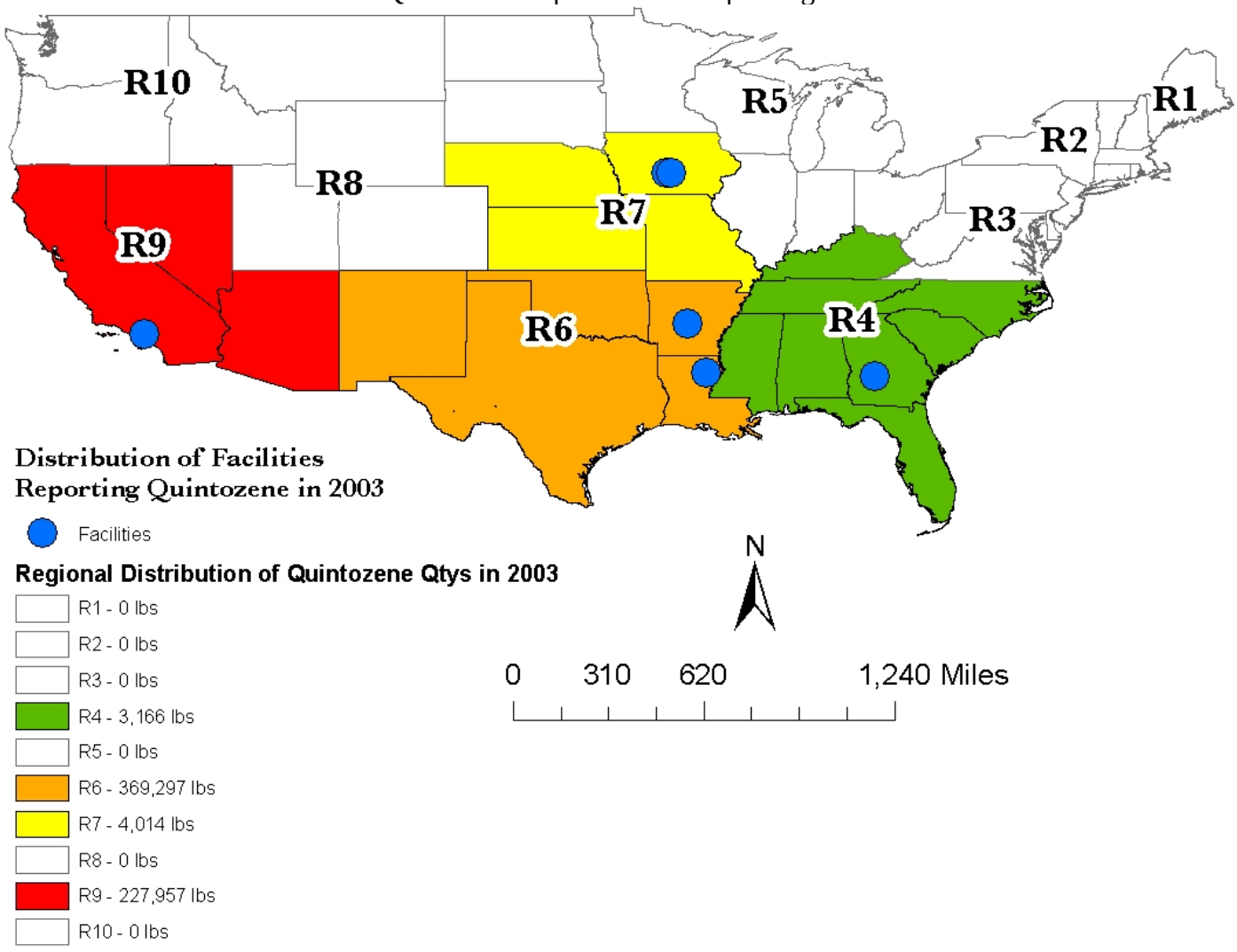


Exhibit 4.231 shows how quintozene was managed by facilities in 4 EPA Regions with facilities that reported this chemical in 2003. In 2003, about 63 percent of the PC quantity of quintozene was sent to offsite treatment, primarily by facilities in Regions 4, 6, and 7. Although the facility

in Region 9 also sent some of the quintozene to offsite treatment, over 98 percent was sent to offsite energy recovery. In 2003, very little recycling of quintozene was reported by facilities in these Regions.

Exhibit 4. 231. Management Methods for Quintozene, By EPA Region (2003)

EPA Region	Disposal		Energy Recovery		Treatment		Recycling	
	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
6	679	0	0	0	0	368,618	0	0
9	0	0	0	223,510	0	4,447	0	0
7	0	14	0	0	0	4,000	105	0
4	0	0	0	0	0	3,166	0	0

State Trends- Quintozene. Exhibit 4.232 shows the quantity of quintozene, between 1999 and 2003, that was reported by facilities in 6 states. One facility in Arkansas accounted for 61 percent of the total quantity of this chemical in 2003. One facility in California accounted for almost 38 percent of the total quantity. Since 1999, Arkansas facilities reported a significant increase of quintozene while facilities in Ohio no longer reported this chemical. (Exhibit 4.233). Except for facilities in Ohio, there were increased quantities reported by facilities in every other Region.

Exhibit 4. 232. State-Level Information for Facilities Reporting Quintozene (1999-2003)

State	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
Arkansas	0	262,247	275,976	207,123	368,618	368,618	NA	61.0%
California	214,698	296,406	205,972	195,927	227,957	13,259	6.2%	37.7%
Georgia	2,443	751	931	1,970	3,166	723	29.6%	0.5%
Iowa	47	3,388	1,654	7,210	4,014	3,967	8440.4%	0.7%
Louisiana	0	0	589	0	679	679	NA	0.1%
Ohio	9,893	7,221	5,976	0	0	-9,893	-100.0%	0.0%

Exhibit 4. 233. Trends Analysis on States with Largest Quantity Increase and Decrease (1999 – 2003): Facilities in Arkansas and Ohio

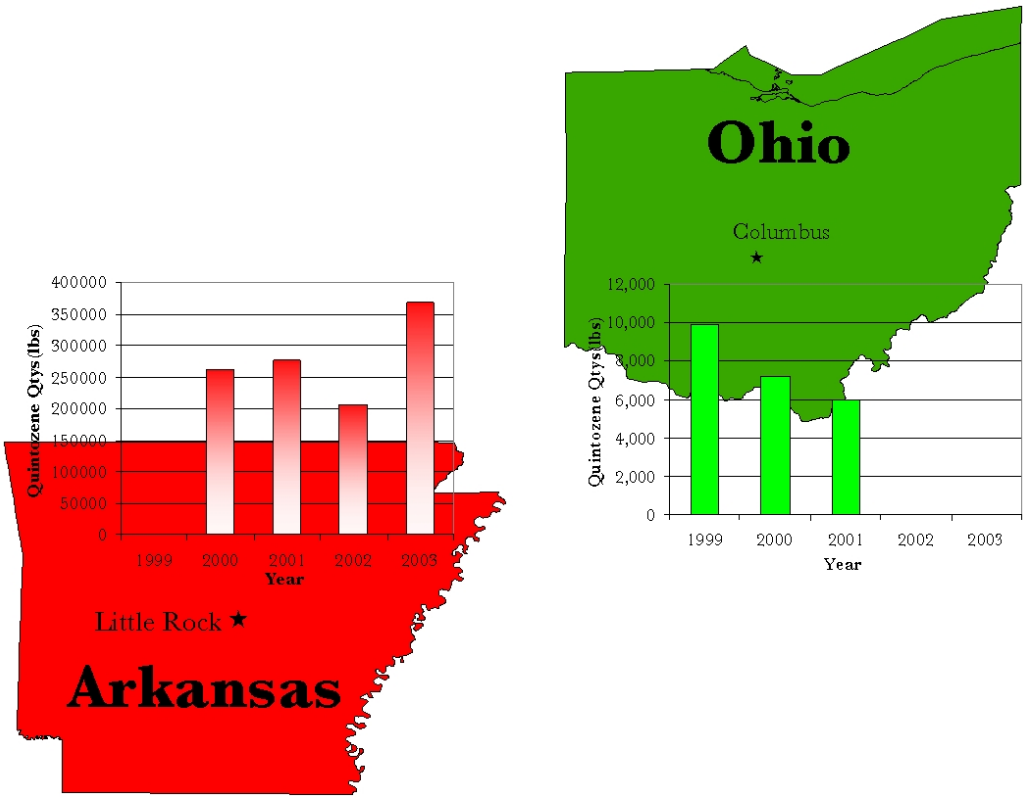
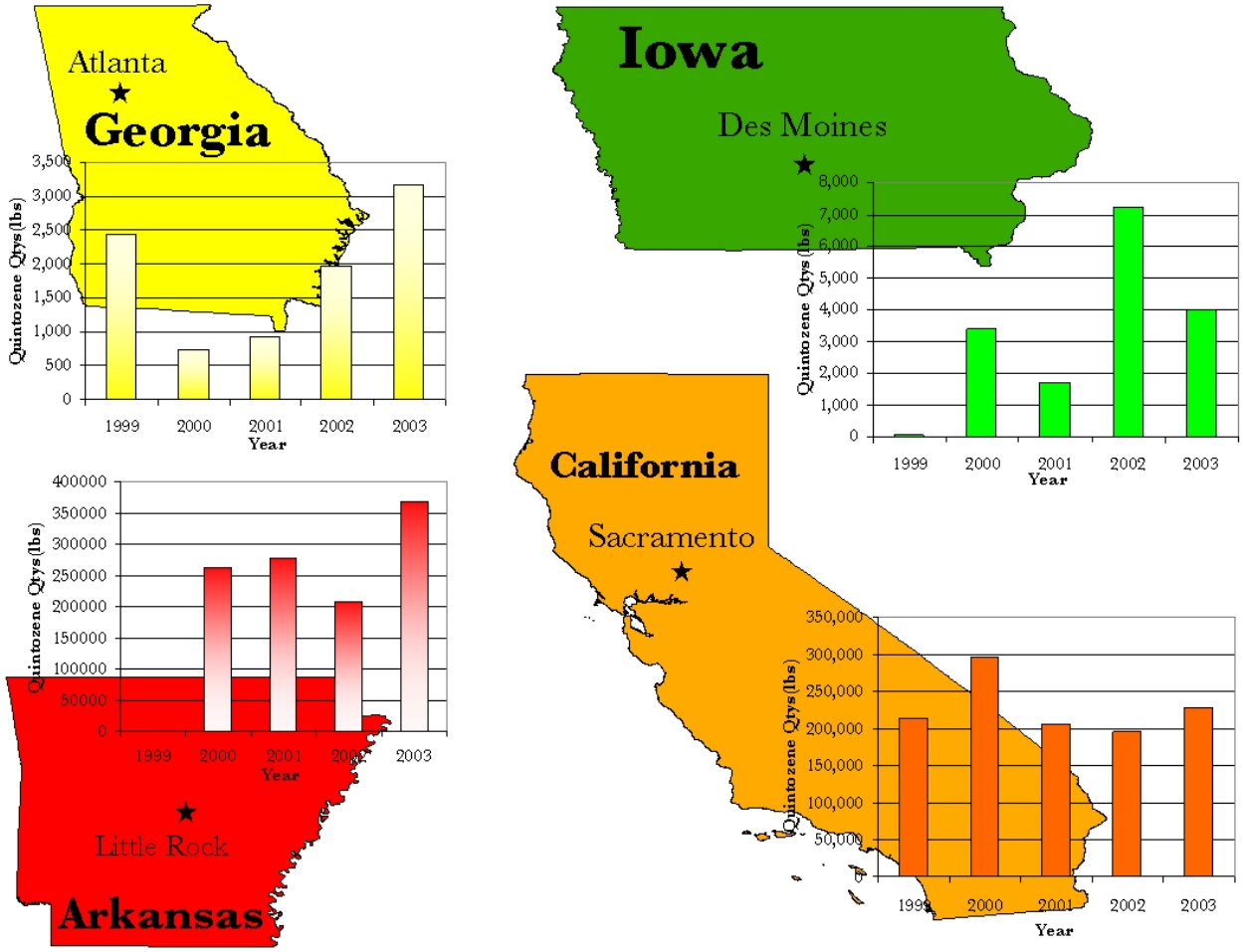


Exhibit 4.234 shows how quintozene was managed by facilities in the 5 states that reported a quantity of this PC in 2003. Virtually the entire quantity of quintozene reported by facilities in Arkansas, Georgia, and Iowa was sent to offsite treatment. Although the facility in California also sent some of the quintozene to offsite treatment, over 98 percent of the quantity was sent to offsite energy recovery. The entire quantity of quintozene reported by the facility in Louisiana was disposed onsite. Very little recycling of quintozene was reported in 2003.

Exhibit 4. 234. Management of Quintozene in States (2003)

State	Total Priority Chemical Quantity (2003)	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
Arkansas	368,618	0	0	0	0	0	368,618	0	0
California	227,957	0	0	0	223,510	0	4,447	0	0
Georgia	3,166	0	0	0	0	0	3,166	0	0
Iowa	4,014	0	14	0	0	0	4,000	105	0
Louisiana	679	679	0	0	0	0	0	0	0

Exhibit 4. 235. Trends Analysis of States Reporting 4 Largest Quantities of Quintozene (2003)



Industry Sector (SIC) Trends- Quintozene. Exhibit 4.236 shows the PC quantity (pounds) of quintozene by 3 industry sectors (SIC codes) where facilities reported this chemical in 1999-2003. In 2003, 6 facilities in 2 industry sectors reported a PC quantity of quintozene. One facility in the SIC 9511 (Air, water, and solid waste management) industry sector accounted for 61percent of this chemical in 2003. Five facilities in SIC 2879 (Pesticides and agricultural chemicals, nec) reported 39 percent of the quintozene in 2003. One facility, located in California, accounted for about 97 percent of the total quantity reported by facilities in the SIC 2879 industry sector.

Exhibit 4. 236. Industry Sector-Level Information for Quintozene (1999-2003)

Primary SIC Code	SIC Description	Number of Facilities for this SIC Code (2003)	1999	2000	2001	2002	2003	Change in Quantity (1999-2003)	Percent of Total Quantity of this Priority Chemical (2003)
9511	Air, water, and solid waste management	1	0	262,247	275,976	207,123	368,618	368,618	61.0%
2879	Pesticides and agricultural chemicals, nec	5	217,188	300,545	209,146	205,107	235,816	18,628	39.0%
2875	Fertilizers, mixing only	0	9,893	7,221	5,976	0	0	-9,893	0.0%

Exhibit 4.237 shows how quintozene was managed by the 6 facilities in the 2 industry sectors that reported a quantity of this PC in 2003. The entire quantity of quintozene reported by the facility in SIC 9511 was sent to offsite treatment. One facility used offsite energy recovery for the largest quantity of quintozene; 2 other facilities managed 100 percent of the quintozene via offsite treatment, and two facilities used disposal.

Exhibit 4. 237. Management of Quintozene in Industry Sectors (SIC Codes) (2003)

Primary SIC Code	SIC Description	Onsite Disposal	Offsite Disposal	Onsite Energy Recovery	Offsite Energy Recovery	Onsite Treatment	Offsite Treatment	Onsite Recycling	Offsite Recycling
9511	Air, water, and solid waste management	0	0	0	0	0	368,618	0	0
2879	Pesticides and agricultural chemicals, nec	679	14	0	223,510	0	11,613	105	0

Recycling. Exhibit 4.238 provides some indication of the extent to which facilities in certain industry sectors recycled at least 100 pounds of quintozene in 1999-2003, rather than manage it as a waste. For those year(s), the facility did not report a PC quantity, i.e., a quantity managed via land disposal, energy recovery, or treatment.

Exhibit 4. 238. Facilities reporting Recycling but not a Priority Chemical quantity (1999-2003)

			1999		2000		2001		2002		2003	
Number of Facilities	EPA Region	State	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle	Onsite Recycle	Offsite Recycle
SIC 2875 -- Fertilizers, mixing only												
1	5	Ohio	0	0	0	0	0	0	6,365	0	0	0